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Electronic publishing: What difference does it make?

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Technological change has always caused anxiety for those people whose task it is to negotiate the change between old and new media. Deprived of familiar points of reference, both publishers and users may feel disorientated when faced with new publication and distribution media. Although this chapter discusses the effects of electronic publication at the beginning of the 21st century, it is instructive to begin by looking at these kind of anxieties from a much older perspective.

To whom shall I give this handsome new book?

Just polished up with dry pumice

Cornelius, shall I give it to you?

Since you thought something of my trifles

Even when you alone in Italy had dared

To set out the whole history of the world

In three books.

By Jupiter, that's a labour of learning

Take this book then, for what it's worth

And virgin patroness, may it last for a century or more. ²

¹ The work for this chapter was completed while I was lecturing at the university of Sheffield department of Information Studies. I would like to thank my students and colleagues for discussing with me some of the ideas that I have used here.

² Cui dono lepidum nouum libellum
arida modo pumice expolitum?

Catullus, *Carmina* I.I

This is by the poet Catullus, who lived in the first century BC. But the problems that worry him are those which still preoccupy those interested in the effect of novel publication media. It has become a truism to compare the revolution brought about by electronic publication to that caused by the invention of printing. Yet here we can see an author agonising about the revolution caused by the beginning of publishing itself. Compared with this printing itself was simply a technological refinement.

Who could blame an author then for asking questions. What is the future of this new publication? What control does the author have over the reception and readership of it? Where does it fit into the current market? Will it be preserved for posterity? How much information can the current technological medium cope with? Will other authors approve?

Catullus is expressing an anxiety in many ways caused by a changing medium.

Whatever the format, though, his friend has clearly packed a huge amount of information into a small space of three scrolls. It is almost though as if he is demanding a new 'delivery mechanism' for the information which is almost too

Corneli, tibi: namque tu solebas
meas esse aliquid putare nugas
iam tum, cum ausus es unus Itolorum
omne aeuum tribus explicare cartis
doctis, Iuppiter, et laboriosis.
quare habe tibi quidquid hoc libelli
qualecumque; quod, patrona virgo
plus uno maneat perenne saeclo.

copious for a conventional publication to cope with. He was also living in an age where two cultures of information provision were coexistent. Only those with appropriate information skills could use the new technology of reading and writing. Authors no longer declaimed their texts to audiences, they wrote them down, but they were still read out by a slave. The voice was still a faster and more reliable delivery mechanism than the laborious copying of a text. But the fact that it was copied showed that there was a demand for the dissemination of written information, and that this could be done for profit.

All of these considerations should suggest parallels with our current situation. Electronic publishing is becoming more widely accepted and available. It is reaching more users and making profits for its producers. But two publication cultures are still co-coexistent. Like a book being written, but read out, most journals, for example, are still printed and delivered electronically. It is still not clear what the effects of electronic publishing are, or what they are likely to be.

By no means all readers now use electronic text. Even well educated users in information intensive jobs still use print more extensively. Others are enthusiastic about the possibility of the new medium to hold unprecedented amounts of information, and are willing to admire the hard work of those who create such information resources, but they are worried about the ways in which their work, and organisational culture may be affected by this. Those who work in this new medium rather anxiously release the products of our effort into the world, unsure about how well it will be regarded, and indeed how long it may last.

The effect of the book on society has indeed been massive. So successful is it as a publication medium that although Catullus poems are now printed in codex form, they have lasted ten times the years that he hopefully asks for. Ironically enough, even two hundred years would be a remarkable lifespan for a digital publication, since some early electronic text can now not be read, after only ten years. (Lee, 2001)

Nevertheless technology progresses at a much faster pace now than in ancient Rome. So is it indeed possible to assess the impact that electronic publishing has had? Is it too early to make predications about their future?

It is important to pause here and consider what is meant by electronic publishing.

Defined broadly this could include anything that is produced in a non paper based form. Since the internet is such a powerful and ubiquitous medium, there is a danger that it is assumed to be synonymous with publications. This is misleading, since the web is no more a publication as such than the paper that a book is printed on. But inevitably, any web page can be thought of as an electronic publication, if it contains text, even if the site is primarily commercial such as a flight booking site or one that compares utility prices. To adopt this definition would almost inevitable force a consideration of the societal impact of the internet and web, or of e-commerce. This is far too big a subject for one chapter. The kind of electronic publication that I am considering, therefore, is that which is at least partially analogous to what we might consider a publication in more conventional form, such as a book, a dictionary, a bibliography or a newspaper, as opposed to one which might be compared to a bank , a café or a shop in the non virtual word.

When electronic publications first began to be widely available in the late 1980s and early 1990s, some sweeping predictions were made about the impact that this would have. Our lives, the publishing industry and publication media, it was thought, would be changed forever. Collections of academic articles appeared in which the death of the book was discussed, and journalists predicted that in a very short time paper would be forgotten as a publication medium for their newspapers. (Tuman, 1992, Nunberg, 1996, Finneran, 1996) Even relatively recent articles have predicted that libraries will become presentational warehouse for rare and antiquated books, while all new stock would be in electronic form. (Friend, 2000). Meanwhile commercial interests have generated large amounts of promotional copy extolling the virtue of ebooks, whether delivered via specialist readers, downloaded onto a PC desktop or a Palmtop, or even sent to a mobile phone. Such texts continue to be actively promoted by booksellers such as Barnes and Noble's online bookshop. (www.barnesandnoble.com)

However, most of the predictions made about the obsolescence of the book have floundered because the needs of users have been ignored, and as Norman (1999) observes, such disregard for the users of technology can quickly endanger the success of even the best products. Commentators who predicted the imminent dominance of the electronic text ignored the considerable obstacle to the use of electronic publications, which is the move from the familiar, convenient delivery mechanism of print to the far less convenient computer screen. The problems presented by reading on a screen should not be underestimated, but remain unsolved. It is still not comfortable to read large amounts of text on screen. (Benson, 2001) Even laptop computers are, in truth, not very portable, due to their size and weight and the screen size and quality of a PDA makes it hard to read much text at a time.. Flat reading

devices for ebooks, such as the Gemstar Rocket e-bookman. (www.ebook-gemstar.com) have also been developed. Xerox is even trying to develop electronic paper, that can be used in a kind of quasi-book fashion. (Cleyle, 2001) However, none of these is as light portable and comfortable on the eye as a book. Users have as yet not flocked to use such devices in significant numbers, for what may seem obvious reasons to all but the ebook industry.

Firms such as Adobe, Microsoft and Xerox remain committed to developing further ebook hardware and software. However, even if a light weight reading device is developed it is not guaranteed to replace the printed book or newspaper. As Bolter (1991, p. 39) observes ‘no one technology of writing has ever proven adequate for all needs’. Even if a technology ceases to be dominant it may survive because it fills a need. For certain types of text, print may always be the best method of delivery. This does not mean that it cannot coexist with the electronic text. The pencil still works perfectly well, despite the invention of the word processor, because in certain conditions it is more suitable for the task in hand. (Dauguid, 1996) When taking notes to write this chapter, for example, I found it more convenient to use printed material and write notes paper with a biro. Users stubbornly insist on choosing to read fiction in printed, paperback form and there is little evidence that even experienced computer and internet users have not been inspired by the promise of online, electronic fiction (Rennie, 2001)

Despite the ability to integrate annotation functions and text searching into e-books, most of them are just that, a book in electronic form. Some publishers realised relatively early on in the existence of electronic publications that this may not be the

best way to capitalise on the advantages of electronic delivery.(Landow, 1996, 1996 b). It was, they realised, preferable to offer users the ability to search the equivalent of thousands of books in seconds. Electronic production of information does, then, endanger the existence the printed book as a reference source. Bibliographies and other reference works are much easier to consult online than in book form. Databases may also aggregate full text content as well as reference listings. It is not surprising that such products as Medline, Lexis Nexis and OCLC's citations indexes have been successful. It is simply much easier for users to search for information in an electronic database or collection than to flick through perhaps multiple volumes of a reference work. There is, however an important difference between these products and e-books, and it lies in the method of their use. Information is retrieved from a reference source, which is not designed to be read. An e-book is usually the result of digitising a source that was designed for reading, and print is still better suited to this complex activity.

Catullus marvels at how much information can be packed into three sheets, but he makes it clear that he admires the writer as a poet rather than merely an information provider. It may seem banal to say that when we read we are looking for more than information, but this is a fact that electronic delivery makes us reconsider. A scholarly monograph is judged on its argument not just the number of facts in it, a literary novel is judged by the artistry of the writer.

The ability of electronic media can deliver far more information than a human mind can recall, and can search it far faster than our brain, must have an impact on the work pattern of those who use electronic publications. Organisational roles where data was simply collected, organised or presented must be affected by this. However, human

agency is still key to this process of using such electronic sources. As Jonscher (1999) observes databases are an ideal ways of organising informational content. However, the significance of such content must be processed by the human brain, and it is this step which is almost impossible to automate. A databases like Lexis Nexis can be searched for records in a matter of seconds, but it will still need a lawyers accumulated experience and powers of reasoning to decide how such information might be used to win a case. Both Jonscher (1999) and Stoll (2000) are concerned that the dominance of computers and electronic resources in schools is, ironically, in danger of producing a population which is ill equipped to use such resources in their working lives. If time in the curriculum is made available for teaching on ITC then other subjects must suffer. It is History, literature and other seemingly useless subjects, they argue, that teach students to reason, analyse and evaluate large amounts of complex information. It is these skills that will be even more crucial when electronic delivery allows access to ever growing amounts of information. Yet there is a risk that students are being trained to use a computer to retrieve data, but not to perform the kind of analysis of it that can only be done by the human brain.

It appears that it is important not to be too radical in the use of electronic publications, and to remember that the same traditional skills and practices are vital in the use of electronic materials as they were in printed text. This kind of conservatism of practice may help to explain why one particular type of electronic publication is arguably the most successful type of all. That is the electronic journal.

Ejournals and their methods of usage are perhaps midway between the ebook and the full text or reference collection. Users still read journal articles, but traditionally it was

relatively rare for a user to read the whole of a given journal issue. Users also need to search for articles on a certain topic across a range of journals or from a back run of issues. Electronic delivery of journals allows this kind of searching to be performed much more easily than when dealing with multiple title pages of a print journal. Access to articles is also facilitated, when users can access an article online, as opposed to having to deal with large bound volumes of several issues at a time. Libraries also favour electronic delivery, since it saves shelf space and cost of binding volumes. However, the actual usage of the material remains very similar to that of printed articles. (Tomney and Burton, 1998) In essence users tend to read the contents having first printed them out.

Although some journals are electronic alone, the most prestigious in any given field are usually those that also appear in print as well. Even those journals which appear only in electronic form tend still to adhere to conventions such as having release dates for discrete, numbered issues. There is no reason why an electronic only journal should do this, except that users are accustomed to such practices, and alerting them to the production of a new issue is a way of informing them about new material being produced. (Wilson, 1999) Some electronic only journals have also tried the use of innovative practices such as adding discussion forums or staging online seminars. But these have not proven to be a success. Hopkins (2000) speculates that, at least in the case of humanities users, this is because users feel uncomfortable about opening up their ideas to public discussion in an unfinished form. They prefer to wait until they are sure of what they want to say, then publish it in a conventional article. Once again it seems that the impact that electronic publications have is driven not so much by the

technology and its potential but by the users and the culture and expectations that they bring to the use of such publications.

It is also theoretically possible for article produced in electronic form to depart from traditional models as seen in printed journals. However, despite some early experiments in online journals such as JIME (<http://www-jime.open.ac.uk/>) this is rarely the case. Ayers (2002) feels that the form of online scholarly journal articles has quickly settled for the most conservative option, despite the possibilities offered by the electronic medium. He has therefore set out to prove that historical research done as part of his Valley of the Shadow project (<http://www.iath.virginia.edu/vshadow2/>) can indeed be presented in an article which makes radical departures from the traditional linear argument. Accordingly he and Mark Thomas have produced an article which is structured as a hypertext, which can be entered at several different points. It allows them to link together key findings as well as to include complex coloured maps and tables which would be unlikely to be included in a print publication. The response of the historical community is not yet known, but the article is now under review, and it will be fascinating to see whether this changes the way that scholarly articles are written or remains an interesting, but isolated experiment.

The article (Ayers and Thomas, 2002) makes use of the potential of electronic media to easily integrate other media. There is, however, a danger of multimedia being integrated just because it is possible, and with no clear idea why it adds to the experience of reading a text. It is, for example, possible to appreciate the Yeats poem 'Lapis Lazuli' without seeing a photograph of a sculpture in the stone or hearing a reading of the poem, as is possible in the edition by O'Donnell and Thrush.(1996)

Indeed this may be the point of reading a poem, that it makes a user exercise their visual imagination as a result of the words they have read. It is important to consider whether an electronic edition of a literary text, including every single image of the original manuscript, or pictures of the author and where he or she lived is so much better than a traditional printed book, or whether it is any more useful to most users.(Flanders 1997 and Robinson, 1997) This becomes especially important is the cost of the electronic products to an individual, library or institution is much higher than that in print.

Some early critics saw the possibility of the integrated multimedia text as disturbing. Bolter (1996) feels that the image is in danger of taking over electronic text and rendering us illiterate. He argues that due to the importance of the web and the number of images it uses the image may become more important than the word. Bolter complained that ‘nobody’ now creates web pages that contain text alone, and seems to take this as a symbol of the death knell of text in electronic form. As with many predictions about electronic publishing, this has so far failed to happen, perhaps, ironically because of the technological limitation of the internet as a delivery mechanism. Web designers are now well aware of the problems caused by large image files which make the page slow to load and thus deter users (Gillespie, 2002)

Bolter and critics like him, who become fixated on the technology often seem to forget that whether they are delivered on the internet or on paper, not all publications are alike, simply because there are words in them, and nor is the way that they are used. It would seem ridiculous to assert that a newspaper, a novel and an academic monograph are seen merely as a publication and that they are used in the same way, by

the same type of person. If a magazine uses a large number of photos, this is not taken as proof of the death of printed crime fiction. Once more, it appears that the effects of electronic publication technology are less radical than some commentators thought they might be.

The integration of multimedia into publications is also not something that we should be surprised about. As print technology progressed authors took the opportunity to integrate what we might now call multimedia into their text. By the Seventeenth century the ability to make prints of images lead to the popularity of emblem book, which integrated poetry with pictures, neither or which could be fully interpreted without the other.³ In Victorian times the case of Illustrated London News or Life magazine or Picture Post in the nineteenth and twentieth centuries shows how popular journalism integrated the image into news gathering a long time before the BBC website was produced.

Electronic delivery has the potential to change the way that academic publications are produced. This was initially a market in which commercial publishers were very interested. Some of the earliest forays into commercial electronic publication were made by Chadwyck-Healey. Rather like Cornelius who is celebrated for producing the whole history of the world in one publication, they grasped the potential of the CD-ROM to make available large amount of textual data. Early publications were not simply reference listings or numerical data but comprise the whole of English poetry

³) It is not surprising that there are already electronic versions of emblem books, such as those produced by Adams and Graham (2000) and Barker Feltham and Guthrie (2001)

from 900 AD to 1900, or the entire works of Goethe. Thus allowing readers not simply to access literature in books, but to search it.

The Canterbury Tales was an early venture into this kind of publishing, which was collaboration between an academic research team and a commercial publishers, Cambridge University Press. (Robinson, 1996, Solopova, 2000) It is planned to produce all of the Canterbury Tales on CD-ROM and that each tale will include all possible manuscript sources. This was originally greeted with much excitement by libraries, publishers and some academics. However the planned series is taking a considerable time to produce, given the small editorial team. CUP also seems to have lost faith in such products, and while later titles in the series may appear in due course, it has failed to increase its list of similar humanities titles. This may be due to doubt that there was enough demand for such products for them to make a profit. This seems to be because while a small number of medieval literature scholars were delighted by the Chaucer CD-Rom, it failed to attract the vast majority of academics, teachers or students in the wider field. Most students and teachers did not change the culture of reading Chaucer in book form, and did not perceive a necessity to use the text in electronic form, thus demand remained small. This must have been disappointing for the publishers when Chaucer is an author who is central to the curriculum at both school and university level. And it must have served as a deterrent to the development of further electronic publications of a more specialist nature. CUP therefore appear to be moving towards the journal market, where users have been easily convinced of the merits, and crucially the necessity of electronic products as a way of improving their working lives.

Other projects, both commercial and those based in university research teams used the medium to present different variations of one text. Editors of printed texts have to choose which one of the texts they feel is the 'best', print that, and present variants from it in note form. It is usually impossible for the reader to make comparison with the actual sources. An electronic edition allows all the manuscripts or variants to be displayed and linked together. This allows the reader to construct their own hybrid edition, which they might change every time they use it. (Bolter, 1992)

In the early to mid 1990s there was great excitement about the possibility of hypertext editions of literary work, or of fiction. Users could make the most of the possibilities of hypertext linking to wander from one lexia to the next, ignoring the constraints placed on them by the traditional narrative which is so much more suited to the printed book. (Doss, 1996) However, this ability to make associative links was not really as new as it appeared. As Ted Nelson (1992) himself has pointed out, when not reading fiction we read few books in a straightforwardly linear fashion. We are very likely to move around from one part to another, ignore some chapters, read some parts in more depth than others, move associatively from a footnote to another text entirely, and above all use navigational devices like indices and contents pages to help us make choices about what to read. When we read a book we are also making associations whether conscious or unconscious to our own private hypertext of knowledge, which comes from other texts. Catullus deliberately places his poem within the poetic tradition of his time, which valued the presentation of a large amount of information, with the utmost elegance, within a small space. When a classicist reads his poem she recognises this because she has read other texts, whether of other classical poets, or by scholars who comment upon them. A hypertext edition of Catullus, as for example

can be found at the Perseus project (<http://medusa.perseus.tufts.edu/>), will make links to such information, but in doing so, is in a sense stressing the connection to the printed past just as much as it is pointing towards an electronic future. (Landow, 1992).

Nevertheless, it seems difficult for many users to transfer skills from the print to the electronic medium (Warwick, 1999). Perhaps as a result of this, such facilities in a novel or edition have not proved very popular. The experience of 'reading' a hypertext can leave users disorientated (Nielson, 1998) and it seems that when reading we rather like the beginning middle and end that printed texts can offer us, or to be guided through a myriad of possibilities by the unseen hand of the expert editor.

Although specialized scholarly products, such as the Canterbury Tales are not finding a mass market electronic research resources are being produced by specialist academic research team situated in universities, and funded by research grants, which means that they do not have to make a projected profit to exist. However, as I have argued elsewhere, while the project teams are doing fascinating work, at least in the humanities there is very little evidence that research culture has changed to accommodate the use of these publications. (Warwick, 2002) Some electronic products such as Bell and Howell's Literature Online site (<http://lion.chadwyck.co.uk>) are used at university level to support teaching and learning, at least where there is money to pay the large cost of resources. However, electronic resources for teaching and learning, do not yet appear to be perceived as a necessity, nor to have enjoyed the success of the electronic journal. This seems to be because, far from replacing books in education, electronic resources have not become part of the mainstream culture

since users have yet to be convinced of their overwhelming importance. There seems to be no 'killer app' that distracts them from the book as the essential tool for learning.

In the Catullus poem, we saw that he expresses a concern about how the text he has produced may be received. As I suggested at the beginning, this is in part a testimony to being at a technological watershed. When poetic culture was largely oral, and philosophical debate was held 'live' rather than on the pages of journals and monographs, this is an understandable anxiety, but it is one with which we had come to terms in the age of print. The author of a printed book is largely resigned to the idea that they have no contact with the reader. However, the electronic text delivered on the web makes a return to the connectedness of author and reader more likely. The common practice of adding email addresses or discussion forums to the site of an electronic publication means that the editors, publishers and authors all invite the readers to communicate with them, and indeed with each other. Thus the editor may not be sure of a 'suitable' reader, or but they are able to find out about the response to their publication is, in a more immediate way than an anxious search for citations in future learned journals. It has also become obvious that just by putting up a website anyone can become a publisher or an author and communicate with millions of others, and indeed this has been held responsible for the low quality of much on the web, and of peoples' perception of it as an unreliable and low status medium.

Once again, however, the connectedness of writers, publishers and their audience, as well as the low status of publication are hardly new. In the early days of the book, in the sixteenth and seventeenth centuries, the activity of publication in print was thought to be a very low status activity, and certainly not something that a serious

writer ought to be proud of. As a result authors would circulate material to their circle of friends, in what become known as coterie publishing. Perhaps the most famous example of this is Shakespeare's sonnets. (Marotti, 1986) This allowed close contact between the author and his readers and enabled those involved to comment on ideas quickly and share knowledge within a small community. All of these ideas predate the pre-print archive, such as the Los Alamos archive for particle physics, by about 300 years. In time, of course, the status of print publication rose, as it became a more common activity. It is possible that the status of web publication will also change as the medium matures and changes, in response not only to technical, but societal changes.

It is possible to see that electronic publishing has indeed affected the way users gain access to information. Electronic delivery has revolutionised access to data and information that may be stored and searched in a database. Reference information has become far more accessible, more quickly to a wider range of people. Electronic journals have been a success, since they provide for the needs of a particular community, and make it easier to search for and access articles. Yet, ultimately the way that information is used has not changed. Whether a doctor accesses information from a medical textbook or Medline, it is still up to her to make the diagnosis. Whether a particle physicist reads an article in the printed or electronic version of Nature its relevance to her particular research will be a matter for her own judgement. Both the doctor and the physicist need to relax, and they may do this by reading novels on the beach, which they found in a holiday guide. She may have booked the holiday online, but it is most likely that the book will be a paperback, and so will the guidebook. Though these two people are perfectly capable of using computers and

electronic publication technology, they will probably choose to access many if not most of the publications that they need in traditional format, because they find printed books, cheaper easier and more convenient to use than the electronic alternatives, should they even exist. Other people on the beach may hardly use electronic publications at all. This does not make them luddites, it may simply be that they do not read academic journals, work in education or need to consult databases of reference or business information. Despite what technology enthusiasts might think, this category is still a large one.

Electronic publication is still a relatively new technology. The effect of the internet as such has obviously been enormous, but that of electronic publishing is still somewhat limited. As we have shown, in certain areas it has made a significant impact, but these are still relatively small. Books and other printed publications are still very much with us. Far from having superseded print, electronic delivery still remains a relatively minor part of the entire book market. This does not make e-books, for example a complete failure, but not the runaway success that had been predicted. None of this should however surprise us. It has been stressed throughout this chapter that it is important to consider the needs of users and the culture in which they work, and also to remember that there is far more continuity with the methods and practices of the past in electronic publication than many had at first thought. As Catullus found, it is hard to look to the future and predict whether your work will be a success, but at least he was thinking about who his readers might be. The effects of reading and literacy changed society, but did so slowly. We should not, therefore be surprised that it is taking time for the effects of electronic publishing to be felt. Change will happen, but it may be more gradual than had been thought, because although computer processing

power may double every 18 months, it take much longer for humans to upgrade themselves, even if they want to.

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